

CLAIMS

- 1 A drill/driver chuck including:
- cylindrical member (2) having a central axial bore (40) and a plurality of further bores (6) such that the plurality of further bores are slanted with respect to the axis of the cylindrical member;
- a plurality of jaws (8), each jaw being associated with a respective one of the further bores (16) and moveable therewithin;
- a conical jaw actuator (10), coupled to each of the jaws (8) of the plurality, for moving the jaws within their respective further bores, the jaw actuator (10) having a conical shape with the walls of the cone having a plurality of slots (12) formed therein such that each slot co-operates with a respective one of the plurality of jaws and wherein movement of the jaw actuator in a direction along the axis of the cylindrical member causes concomitant movement of the jaws (8) within their respective slots (12) in a radial direction with respect to the axis of the cylindrical member;
- the chuck characterised in that no one component part rotates relative to any other component part thereof.
- 20 2 A drill/driver chuck according to claim 1 wherein the jaw actuator (10) is concentrically mounted about the cylindrical member (12).
- 3 A drill/driver chuck according to claim 1 wherein the jaws (8) radially converge or diverge within the central axial bore (4) of the cylindrical member.
- 25 4 A drill/driver chuck according to claim 3 wherein the converging jaws (8) meet each other beyond the confines of the cylindrical member (14).
- 30 5 A drill/driver chuck according to claim 4 wherein converging movement of the jaws (8) is concomitant with radial inward movement of each jaw (8) within its respective slot (12).

6 A chuck including:

a cylindrical member (2) having a central axial bore (4) formed along the longitudinal axis of the cylindrical member and a plurality of further bores (6) such that the plurality of further bores are slanted with respect to the longitudinal axis of the cylindrical member;

5 a plurality of jaws (8), each jaw being associated with a respective one of the further bores (6) and moveable therewithin;

10 a conical jaw actuator (10), coupled to each of the jaws (8) of the plurality, for moving the jaws within their respective further bores, the jaw actuator (10) having a conical shape with the walls of the cone having a plurality of slots (12) formed therein such that each slot co-operates with a respective one of the plurality of jaws and wherein movement of the jaw actuator in a direction along the axis of the cylindrical member causes concomitant movement of the jaws (8) within their respective slots (12) in a radial direction with respect to the axis of the cylindrical member; and

15 a thrust plate (16) coupled to the jaw actuator (10), the thrust plate (16) movable along the longitudinal axis in order to apply movement force to the jaw actuator (10), said thrust plate (16) constrained against rotational movement about the longitudinal axis.

20 7 The chuck recited in claim 6, wherein the jaw actuator (10) is concentrically mounted about the cylindrical member (2).

25 8 The chuck recited in claim 6, wherein the jaws (8) radially converge or diverge within the central axial bore (4) of the cylindrical member.

9 The chuck recited in claim 8, wherein the converging jaws (8) meet each other beyond the confines of the cylindrical member (2).

30 10 The chuck recited in claim 9, wherein converging movement of the jaws (8) is concomitant with radial inward movement of each jaw (8) within its respective slot (12).

11. The chuck recited in claim 6, said cylindrical member (2) further including an axially extending shaft (20), said actuator (10) and said thrust plate (16) mounted about said shaft (20).

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12. The chuck recited in claim 11, said actuator including a collet member (26) disposed about said shaft (20), said thrust plate (16) disposed about said collet member (26).

- 10 13. The chuck recited in claim 12, said collet member (26) including an external annular recess (24), a retainer (28) disposed in said recess to retain said thrust plate (16) on said collet member (26).

14. The chuck recited in claim 13, said thrust plate (16) including a bush (22) facing said jaw actuator (10).

- 15 15. The chuck recited in claim 14, a thrust bearing disposed between said bush (22) and said jaw actuator (10).

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